

# **Advantage<sup>TM</sup> CA-Datcom<sup>®</sup> Database Server Option**

## **Installation and Maintenance Guide**

**5.0**



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# SMP/E Overview

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Consistent with Computer Associates International, Inc. (CA) policy to take advantage of standard operating system installation and maintenance methodologies, the installation process for Advantage™ CA-Datcom® Database Server Option (Advantage CA-Datcom Server) uses the IBM System Modification Program Extended (SMP/E).

SMP/E is required for product installation and for the application of future product maintenance and upgrades.

This chapter presents an overview of SMP/E. It is not intended to be a complete presentation of SMP/E functions and capabilities. Rather, it is a brief introduction to the subject, which provides you with enough information to proceed with the product installation.

**Note:** If you have experience using SMP/E, you can skip this chapter.

Topics discussed in this chapter include:

- Description
- Benefits
- Operations
- Processing
- Libraries
- Commands

## Description

SMP/E is designed to manage the installation and modification of OS/390 products. Additionally, at your discretion, you can use SMP/E to install and maintain user modifications to installed products.

## Objectives

SMP/E has two major objectives:

- To automate and manage the installation of products and all modifications to those products
- To ensure that all modifications are applied correctly, completely, and to the proper product version levels

## Facilities

SMP/E provides the facilities needed:

- To create and maintain a set of SMP/E data sets. These data sets record information concerning product structure, content, and modification status.
- To store and install the basic software product.
- To ensure that all modifications installed meet the following criteria:
  - Properly formatted
  - Appropriate to the product
  - At the correct service level for the product
  - Free of known errors
  - Not dependent on modifications which contain errors
  - Installed completely
- To ensure that all modifications that depend on each other are installed together.
- To remove modifications after installation, if errors are uncovered.
- To optionally manage the installation of user modifications to existing products.
- To maintain a historical record of product modifications.
- To let you maintain and make queries against the data sets SMP/E uses to record information concerning product structure and modification status.



## Program Elements

During the installation and maintenance process, SMP/E manages the basic program components, which make up Advantage CA-Datcom Server. The program components are listed following:

- Macros
- Source modules
- Object modules
- Executable modules

SMP/E is responsible for managing these basic program elements and for the creation of the executable load library.

The implementation of SMP/E support for Advantage CA-Datcom Server is designed to be easy to use for installation and maintenance. An SMP/E product expert is *not* required to use this product in an SMP/E environment.

## Benefits

The major benefit of using SMP/E for product a installation is the ability of SMP/E to accurately and explicitly control the application of subsequent maintenance.

SMP/E ensures that all maintenance delivered by Computer Associates is applied completely and accurately to your Advantage CA-Datcom Server system in an easy and efficient manner.

You are no longer required to keep track of which PTFs you have applied to your system. SMP/E will track all maintenance activity. In addition, SMP/E will automatically reassemble or relink all affected modules.

## Operations

SMP/E is used to install and maintain software on OS/390 operating systems. Software products designed to be installed with SMP/E *must* be installed with SMP/E. Software products that are not designed to be installed with SMP/E *cannot* be installed using SMP/E.

Once a software product is installed by SMP/E, all subsequent maintenance and modifications to that software must be applied by SMP/E.

**Important!** This product is designed to be installed and maintained with SMP/E. You must have installed SMP/E Version 1.8 or higher on your system before you can install this product.

The remainder of this chapter introduces SMP/E for the Advantage CA-Datcom Server user, and supplies the information needed to apply maintenance to the product using SMP/E.

## Processing

When a product is packaged for installation by SMP/E, the card-image file containing all the information about the product and its various elements is called a SYSMOD. The SYSMOD specifies macro names, module names, link edit attributes, relationships between elements, prerequisite SYSMODs, and other information, which describes how SMP/E will install the product.

## Consolidated Software Inventory (CSI)

During the SMP/E installation, SMP/E processing places all macro and object modules into their proper libraries. SMP/E also performs required assemblies and link edits. Throughout the installation, SMP/E retains information about every module, library, and process used. SMP/E keeps a record of the entire product installation and configuration. Virtually all of this information is stored in the Consolidated Software Inventory (CSI).

The CSI is a VSAM data set, which is the repository that SMP/E uses to record all processing activities. VSAM is the primary data set of SMP/E. Every SMP/E job must refer to a CSI through a DD card. Then the CSI points to the referenced or updated libraries.

Advantage™ CA-Datcom® Database products are designed to be installed into an SMP/E CSI specifically for Advantage CA-Datcom Database products. Subsequent Advantage CA-Datcom Database products will be delivered in SMP/E format and should be installed into the same CSI as your previously installed products.

Based on the information stored in the CSI, SMP/E is able to track and apply maintenance. For example, if a PTF is issued against a macro, SMP/E will automatically reassemble all of the source modules, which use the macro, and relink all of the load modules that should include the new object module.

## Target and Distribution Zones

Every SMP/E job contains an SMPCSI DD card, which points to the CSI, more specifically the global zone in the CSI. The global zone points to the other zones in the CSI. In this installation, the following zones are defined:

- Target zone (DCOMTGT)
- Distribution zone (DCOMDLB)

These zones are initialized with DDDEFs, the dynamic equivalent of DD statements, to point to the necessary Target and Distribution libraries.

## Libraries

SMP/E uses two sets of libraries when a product is installed:

- Target libraries are the product execution or runtime libraries consisting of a macro library (CAIMAC) and a load library (CAILIB).
- Distribution libraries are the product backup or recovery libraries consisting of macro libraries (for example, CYT40MLD) and load libraries (for example, CYT40LLD).

During the course of the SMP/E installation process, modules will populate the Target and Distribution libraries.

## SMP/E Commands

There are six main SMP/E commands:

- SET BOUNDARY (SET BDY)
- RECEIVE
- APPLY
- ACCEPT
- REJECT
- RESTORE

Every SMP/E job must have an SMPCNTL DD statement and an SMPCSI DD statement. The SMPCNTL DD statement points to these commands.

<b>SET BOUNDARY</b>	The SET BOUNDARY command specifies which zone in the CSI is to be affected by the subsequent SMP/E commands. For example, the RECEIVE command is always preceded by a SET BOUNDARY(GLOBAL) command.
<b>RECEIVE</b>	<p>The RECEIVE command checks the SYSMOD for syntax errors, saves its name in the global zone, and saves a copy of the SYSMOD. The SMPPTFIN DD statement points to the SYSMOD to be received.</p> <p>SMP/E loads the installation tape into temporary data sets. If any error is detected or the user wishes to stop the process at this point, a REJECT command can be run, which backs out the tasks accomplished with a RECEIVE command.</p>
<b>APPLY</b>	<p>With the APPLY command, SMP/E performs the operations dictated by the Modification Control Statements (MCS), and updates the target libraries. You can then test the modification. If the installation needs to be aborted at this point, use a RESTORE command, which restores the target libraries from the distribution libraries.</p> <p>The APPLY command is preceded by a SET BOUNDARY command, specifying the name of the target zone. The APPLY command updates the target zone with information from the saved SYSMOD and uses that information to populate the target libraries. The APPLY command can cause various system utilities (such as IEBCOPY, IEV90, IEWL, AMASPZAP) to be run, depending on information in the SYSMOD.</p>
<b>ACCEPT</b>	<p>During ACCEPT processing, SMP/E updates the distribution libraries with a product or maintenance application. No direct way exists to undo the ACCEPT processing after it has been completed.</p> <p>For initial installations or the application of a maintenance tape, always run an ACCEPT operation to establish permanent backup libraries.</p> <p>During a maintenance application of an APAR or test fix, do not perform an ACCEPT.</p> <p>When a SYSMOD has been accepted, the only way to remove it from the system is to restore all the target, distribution, and SMP/E data sets from system backups, which were taken before the SYSMOD was accepted.</p>
<b>REJECT</b>	The REJECT command is used to back out the effects of a RECEIVE command.
<b>RESTORE</b>	The RESTORE command is used to remove the SYSMODs installed with the APPLY command. When a SYSMOD is restored, it is rejected as well, assuming default settings in the global zone as initialized by the product installation.

# System Requirements

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This chapter contains the system requirements for the installation and implementation of Advantage CA-Datcom Server in the OS/390 environment. Topics discussed include:

- Hardware and software requirements
- DASD requirements
- CA Common Services™ for z/OS and OS/390 (formally called Unicenter TNG Framework for OS/390)

## Hardware Requirements

- This product is distributed on a 6250 BPI tape reel or 3480 tape cartridge. A tape drive capable of reading one of these is required for installation.
- This product requires an IBM Systems/370, 43xx, or 30xx processor or any mainframe computer system that is plug-compatible with these systems.
- This product requires one of the following DASD devices:
  - 3340
  - 3350
  - 3375
  - 3380
  - 3390
  - 9345

## Software Requirements

- MVS/ESA, OS/390, or z/OS.
- If you are installing the UNIX System Services component, you must have IBM UNIX Systems Services installed.
- SMP/E Version 1.8 or later must be installed prior to installation.

**Important!** This product is designed to be installed and maintained with SMP/E. It cannot be installed on your system unless you first install SMP/E Version 1.8 or later. All maintenance and modifications must be applied by SMP/E.

- Advantage™ CA-Datcom/DB® Database (Advantage CA-Datcom/DB) Release 9.0 (or later) with the SQL Option.
- You must install the required CA Common Services for z/OS and OS/390 components prior to installing this product. See “Introduction to CA Common Services for z/OS and OS/390” for details.
  - If you are installing the UNIX System Services component, you must have the necessary CCI component of CA Common Services for z/OS and OS/390. The SMP/E FMID for this component is CTN2221.

## DASD Requirements

The following tables indicate the estimated blocks of DASD space Advantage CA-Datcom Server requires. The total number of tracks required for all data sets on a 3390 device type is 380. Each data set, library, or database name is preceded by its high-level qualifier (such as CAI.HLQ or CAI.SHLQ).

### Available Blocks/Tracks (by DASD Device Type)

Block Size	3330	3350	3375	3380	3390
MAX	13030	19069	32760	32760	32760
3120	4	5	10	15	18
6144	2	3	5	7	9
8000	1	2	4	5	7
19069	0	1	1	2	3
23800	0	0	1	1	2
32760	0	0	1	1	1

## Library Allocation

Library Name	BLKSIZE	PRIMARY	SECONDARY	DIRECTORY
SAMPJCL	3120	312	13	13

## Headings

The column heading VOLUME on the following charts refers to the VOLSER from the installation worksheet. The heading TRKS refers to the number of tracks used with DASD type 3390.

## SMP/E CSI and Data Sets

*These are required only if you are creating a new SMP/E environment.*

	VOLUME	BLKSZ	LRECL	TRKS	#BLKS	SEC	DIR
SMPCSI.CSI	VS KSDS						
SMPCSI.CSI.DATA	DASD01	143	24	30	n/a	n/a	n/a
SMPCSI.CSI.INDEX	DASD01	4089	0	15	n/a	n/a	n/a
PPOPTION	DASD01	3120	80	22	390	260	60
SMPSCDS	DASD01	3120	80	43	780	390	300
SMPMTS	DASD01	3120	80	8	130	130	15
SMPPTS	DASD01	3120	80	65	1170	390	600
SMPSTS	DASD01	3120	80	8	130	130	15
SMPHOLD	DASD01	3120	80	65	1170	390	

## Base Distribution Libraries

	VOLUME	BLKSZ	LRECL	TRKS	#BLKS	SEC	DIR
CYT50LLD	DASD03	6144	0	43	384	32	12
CYT50MLD	DASD03	3120	80	11	195	13	10

## Target Libraries

	VOLUME	BLKSZ	LRECL	TRKS	#BLKS	SEC	DIR
CAILIB	DASD02	6144	0	61	480	80	12
CAIMAC	DASD02	3120	80	14	195	13	10

## Introduction to CA Common Services for z/OS and OS/390

To help you quickly understand all that the CA Common Services for z/OS and OS/390 offers, this section provides a brief description of each service used by this product.

CA Common Services for z/OS and OS/390 is a group of system services that protect your investment in products by helping you manage your data center more efficiently. Each of the CA Common Services for z/OS and OS/390 offers individual benefits. The following components are used with and benefit this product:

- CAIENF, CA LMP, and CAIRIM assist you in getting your products running and keeping them running.
- CAISSF enables your products to offer standardized security interfaces.
- CAICCI lets Advantage CA-Datcom Database products to work together across platforms.

The remaining pages of this chapter discuss these services in more detail.



## CAIENF

The CAI Event Notification Facility (CAIENF) is an operating system interface service that offers a simple and flexible approach for Computer Associates products to obtain data from OS/390. By centralizing operating system interfaces within CAIENF, many features that were formerly available within a single product can be shared across the entire product line. The routines, which accomplish this, are grouped under the Computer Associates OS/390 service code, W110. CAIENF features include:

- Dynamic installation and reconfiguration
- True recovery from system or individual power outages
- High performance asynchronous processing
- Single interface between CA products and operating system data
- Built-in diagnostic aids
- Ease of customization
- Exploitation of relational database technology

## CA LMP

The CA License Management Program (CA LMP) provides a standardized and automated approach to the tracking of licensed software. It uses common real-time enforcement software to validate user configuration. CA LMP reports on activities related to the license, usage, and financials of your CA products. The routines, which accomplish this, are integrated into the Computer Associates OS/390 dynamic service code, S910 (CAIRIM). CA LMP features include:

- Common key data set which can be shared among many CPUs
- “Check digits” used to detect errors in transcribing key information
- Execution keys you can enter without affecting any CA product already running
- No special maintenance requirements

## CAIRIM

The CAI Resource Initialization Manager (CAIRIM) is the common driver for a collection of dynamic initialization routines that eliminate the need for user SVCs, SMF exits, subsystems, and other installation requirements commonly encountered when installing system software. These routines are grouped under the Computer Associates OS/390 dynamic service code, S910. CAIRIM features include:

- Obtaining SMF data

- Verification of proper software installation
- Installation of OS/390 interfaces
- Automatic startup of CA and other vendor products
- Proper timing and order of initialization

## CAISSF

The CAI Standard Security Facility (CAISSF) allows CA products to offer standardized security interfaces without regard to the particular needs of underlying access control software. CAISSF offers user authentication and resource access validation facilities, and can interface with CA security products (eTrust™ CA-ACF2® Security for z/OS and OS/390 (eTrust CA-ACF2) or eTrust™ CA-Top Secret® Security for z/OS and OS/390 (eTrust CA-Top Secret)) or compatible non-CA security products. CAISSF is a sub service contained within the Computer Associates OS/390 service code, S910 (CAIRIM).

For CA security products, CAISSF features include:

- A single security mechanism
- Isolation of CA products from CA or vendor mechanisms

For non-CA security products, CAISSF features include:

- Resource class translation
- Access level translation
- Selective logging of requests
- Request type control
- Message support for failed access

## CAICCI

CAICCI, CAI Common Communications Interface, enables Computer Associates products to communicate with one another. This facility provides a layer that isolates application software from the specifics of the communications environment. The routines that make this possible are grouped under the Computer Associates OS/390 service code, W410. Some of the features include:

- Single point of control
- Multiple platform support
- Performance optimization
- Peer-to-peer (program-to-program) communication

- Parallel conversations
- Dynamic installation configuration
- Ease of customization
- Error handling

## Using CA LMP

Advantage CA-Datcom Server requires CA LMP to initialize correctly. CA LMP provides a standardized and automated approach to the tracking of licensed software.

**Note:** The DATACOM startup option specifies the licensed CA products that will execute with this Multi-User Facility. These features will be verified to be licensed for execution by CA LMP.

Examine the CA LMP Key Certificate you received with your product installation package. The certificate contains the following information:

### Key Certificate:

Fields	Descriptions
Product Name	The trademarked or registered name of the product licensed for the designated site and CPUs.
Supplement	The reference number of your license for the particular product, in the format nnnnnn – nnn. This format differs slightly inside and outside of North America, and in some cases may not be provided at all.
Expiration Date	The date (month dd, yyyy, as in July 10, 2002) your license for this product expires.
Technical Contact	The name of the technical contact at your site that is responsible for the installation and maintenance of the designated product. CA addresses all CA LMP correspondence to this person.

Fields	Descriptions
MIS Director	The name of the Director of MIS, or the person who performs that function at the site. If the title, but not the name of the person, is indicated on the Certificate, please supply the actual name when correcting and verifying the Certificate.
CPU Location	The address of the building where the CPU is installed.
Execution Key	An encrypted code required by CA LMP for product initialization. During installation, it is referred to as the LMP Code.
Product Code	A two-character code that corresponds to this particular product.
CPU ID	The code that identifies the specific CPU for which installation of your product is valid.

CA LMP is provided as an integral part of CAIRIM. Once CAIRIM has been installed or maintained at Service Level A5 or higher, CA LMP support is available for all CA LMP-supported CA products.

## Defining KEYS

The CA LMP execution key, provided on the Key Certificate, must be added to the CAIRIM parameters to ensure proper initialization of all CA products. To define a CA LMP execution key to the CAIRIM parameters, modify member KEYS in the OPTLIB data set. Parameter structure for member KEYS appears following:

```
PROD(pp) DATE(ddmmyy) CPU(yyyy-mm) LMPCODE(kkkkkkkkkkkkkkk)
```

*pp* (Required) The two-character product code. For any given CA LMP product, this code agrees with the product code already in use by the CAIRIM initialization parameters for earlier genlevels of the product.

*ddmmyy* The CA LMP licensing agreement expiration date.

*yyyy-mm* (Required) The CPU type and model (for example, 3090-600) on which the CA LMP product will run. If the CPU type, model, or both require less than four characters, blank spaces are inserted for the unused characters.

sssss (Required) The serial number of the CPU on which the CA LMP product will run.

kkkkkkkkkkkkkkkk (Required) The execution key needed to run the CA LMP product. The CA LMP execution key is provided on the Key Certificate shipped with each CA LMP product.

### Example

In this example of a control card for the CA LMP execution software parameter, the execution key value is invalid and provided *as an example only*.

```
PROD (YT)  DATE (15JAN02)  CPU (3090-600 /370623)  LMPCODE (52H2K06130Z7RZD6)
```

For a full description of the procedure for defining the CA LMP execution key to the CAIRIM parameters, see your *CA Common Services for z/OS and OS/390 Getting Started Guide*.

# Installation Tape

## Installation Tape Contents

Contents of the installation tape include:

File	Data Set Name	Description
1	CAI.INSTALL	Unused
2	CAI.IE21.CLIST	Unused
3	CAI.IE21.ISPMLIB	Unused
4	CAI.IE21.ISPPLIB	Unused
5	CAI.IE21.ISPSLIB	Unused
6	CAI.IE21.ISPTLIB	Unused
7	CAI.IE21.LOADLIB	Unused
8	CAI.IE21.PIMLIB	Unused
9	CAI.SAMPJCL	Sample JCL PDS
10-31		Unused
32	SMPMCS	SMP/E Modification Control Statements
33	CYT5000.F1	Relfile 1
34	CYT5000.F2	Relfile2
35	CYT5010.F1	Relfile for USS components

# Installation Worksheet

The pre-installation worksheet provided following is designed to simplify modifying the JCL supplied at installation. The parameters identified on this worksheet are required for the installation job procedures. Default values are provided for your convenience.

You can reproduce the worksheet provided or print the SMPJCL member @YTWKSHT.

## IBM CBIPO

If you have the IBM CBIPO, there is a procedure to facilitate editing the sample JCL installation job members.

You can review sample JCL PDS members @YTIPOJC, @YTIPOIN, and @YTIPDMY to use a batch program that will globally change the sample JCL PDS for the parameter value strings to the desired values.

PDS Member	Description
@YTIPOJC	Sample job JCL to execute batch program
@YTIPOIN	Sample parameter string to change SYSIN member
@YTIPDMY	Sample prerequisite member to rename for batch program use

Member @YTIPOIN contains at least one entry for each worksheet parameter. Each entry consists of **STRING1**<**STRING2**>. In each case, **STRING1** represents what is currently in the installation job members in the sample JCL PDS. You should change **STRING2** so that the worksheet values for your install are incorporated.

Since the batch JCL editing procedure will change all members, you may wish to create a backup copy of the sample JCL PDS before executing @YTIPOJC.

While the global edit procedure eliminates the requirements for almost all manual editing of install jobs, you should still review each job's instruction block for any optional changes.

## Install JCL Procedure Parameters Worksheet

	Parameter Description	PROC Parameter
1.	What is the name of the SMP/E data set? <b>Default: 'CAI.SMPCSI.CSI'</b> Maximum Length: 24 characters	&YTCSI =
2.	What high-level qualifier is used to prefix the SMP/E target libraries? <b>Default: 'CAI.THLQ'</b> Maximum Length: 28 characters	&YTTHLQ =
3.	What high-level qualifier is used to prefix the other SMP/E data sets and libraries? <b>Default: 'CAI.SHLQ'</b> Maximum Length: 28 characters	&YTSHLQ =
4.	What DASD volume serial name is to be used for the Advantage CA-Datcom Database Server Option SAMPJCL and Relfiles? <b>Default: 'DASD01'</b> Maximum Length: 6 characters	&YTVOL1 =
5.	What DASD type is the YTVOL1 volume? (For example, 'SYSDA,3380,3390,9345') <b>Default: '3390'</b> Maximum Length: 8 characters	&YTUNI1 =
6.	What DASD volume serial name is to be used for the Advantage CA-Datcom Server Target Libraries? <b>Default: 'DASD02'</b> Maximum Length: 6 characters	&YTVOL2 =



	Parameter Description	PROC Parameter
7.	What DASD type is the YTVOL2 volume? (For example, 'SYSDA,3380,2290,9345')  <b>Default: '3390'</b>  Maximum Length: 8 characters	&YTUNI2 =
8.	What DASD volume serial name is to be used for the distribution libraries?  <b>Default: 'DASD03'</b>  Maximum Length: 6 characters	&YTVOL3 =
9.	What DASD type is the YTVOL3 volume? (For example, 'SYSDA,3380,3390,9345')  <b>Default: '3390'</b>  Maximum Length: 8 characters	&YTUNI3 =
10.	What is the volume serial of the Advantage CA-Datcom Server install tape?  <b>Default: 'YTYMM'</b>  Maximum Length: 6 characters	&YTITVOL =
11.	What unit type is the YTITVOL TAPE volume? (For example, 'TAPE,CART')  <b>Default: 'TAPE'</b>  Maximum Length: 8 characters	&YTITUNI =
12.	What DASD volume serial name is to be used for the VSAM space of the SMP/E CSI cluster?  <b>Default: 'VSAMPK'</b>  Maximum Length: 6 characters	&YTVSPK=
13.	What is the name of the Linkage Editor module?  <b>Default: 'IEWL'</b>  Maximum Length: 8 characters	&YTLKED =
14.	What is the name of the Assembler module?  <b>Default: 'ASMA90'</b>  Maximum Length: 8 characters	&YTASM =

	Parameter Description	PROC Parameter
15.	What is the unit name of the device for temporary work DSNs?  <b>Default: 'SYSDA'</b>  Maximum Length: 6 characters	&YTSY =
16.	What DASD volume serial name is to be used for the SMPTLIB temporary Relfiles?  <b>Default: 'SMPVOL'</b>  Maximum Length: 6 characters	&YTTVOL =
17.	What DASD type is the SMPVOL volume? (For example, 'SYSDA,3380,3390,9345')  <b>Default: '3390'</b>  Maximum Length: 8 characters	&YTTUNI =

# Installation Process

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This chapter provides step-by-step instructions for installing Advantage CA-Datcom Server.

Read the cover letter and any Product Maintenance Letters (PMLs) delivered with the installation tape before you begin the installation process.

## Upgrading from a Previous Version

If you are upgrading from a previous version, this version is a complete install. This version can be run as a separate Server while you maintain the previous version as another Server.

Ensure that you have done the following:

- Reviewed any PMLs issued since you last installed or upgraded
- Applied all PTFs beyond the base genlevel
- Applied all PTFs required for Advantage CA-Datcom/DB that can affect this product

If you are upgrading from the previous version using the existing CSI, be aware that SMP/E supercedes all SYSMODs for the previous version when installing the current version. Thus, you are able to run with the existing prior version libraries, but will not be able to maintain them using SMP/E. If you wish to retain the previous version as an active environment for any reason, then you must install into new target and distribution zones and later delete the old SYSMOD from the old zones.

## Installing the UNIX System Services Component

Advantage CA-Datcom Server Version 5.0 includes a component that will run under UNIX System Services, rather than running Advantage CA-Datcom Server using a desktop workstation. If you intend to install this component, follow the installation instructions for running the optional install jobs.

## Allocating the USS Component HFS

To allocate a new HFS for the USS component, SAMPJCL member USSHFS can be used. You can use an existing HFS if desired, but using a separate HFS will ease any future changes to an upgraded version.

**Important!** *The HFS needs to be mounted read/write before continuing further. SAMPJCL member HFSMOUNT can be used to mount the HFS.*

Now is a good time to update your BPXPRMxx member to include the mount point as well, so subsequent IPLs will mount the HFS automatically.

## Java in the IBM Environment

The UNIX System Services component of Advantage CA-Datcom Server includes a component that processes requests from a Java-based application. Recent versions of z/OS and OS/390 include the Java with the web server so that both are installed together. If you are running an older OS/390 version and have not previously used Java on OS/390, you can order a copy on tape from IBM or download the most recent version from IBM's web site (<http://www.s390.ibm.com>). Be certain to install all necessary prerequisites and follow the installation documentation exactly. You should verify that you can run some of the IBM-provided Java sample programs before attempting to use the UNIX System Services component of Advantage CA-Datcom Server.

## Overview

Before you begin the installation steps outlined following, ensure that all PROC parameters on the installation worksheet have a valid value. These values are required for all installations and are useful for applying maintenance.

Step	Description	Purpose
1.	Enter and submit YTINS01 to allocate and unload the SAMPJCL library from the installation tape.	Creates the SAMPJCL library from which you retrieve members to complete the installation.

Step	Description	Purpose
2.	Retrieve YTINS02 from the SAMPJCL, perform changes as directed, and submit the JCL.	Allocates and initializes the SMP/E CSI and data sets for the installation.  Allocates the indirect, target, and distribution libraries and other SMP/E data sets, and add the product DDDEFs to the target and distribution zones.
2a.	(Optional) Retrieve YTINS02A from the SAMPJCL, make changes as directed, and submit the JCL.	Adds the UNIX System Services component DDDEFs to the target and distribution zones, and sets up the directories in UNIX System Services.
3.	Retrieve YTINS03 from the SAMPJCL PDS, make changes, and submit the JCL.	Executes SMP/E RECEIVE of this product.
4.	Retrieve YTINS04 from the SAMPJCL PDS, make changes, and submit the JCL.	Executes SMP/E APPLY of this product.
5.	Retrieve YTINS05 from the SAMPJCL PDS, make changes, and submit the JCL.	Executes SMP/E ACCEPT of this product.

## Installation Steps

Perform the following steps to install Advantage CA-Datcom Server.

### Step 1 – Allocate the Advantage CA-Datcom Server SAMPJCL Library

The SAMPJCL library contains the JCL you need to complete all subsequent installation steps. Allocate your SAMPJCL library by following these procedures:

1. Using the following sample JCL as a model, create SAMPJCL member YTINS01 to allocate a SAMPJCL PDS.
2. Submit the JCL to execute the IEFBR14 program, which allocates and unloads the product SAMPJCL PDS to complete this step. The JCL you submit copies the sample JCL from tape to disk.
3. Review the output for successful completion.
4. Expect a condition code of 00.

The following illustrates the sample JCL and global changes you will perform using the worksheet defaults.

## Sample JCL

To modify the sample JCL following for your site, refer to your Installation Worksheet and perform the following global changes:

- 'CAI.SHLQ' to your own SMP/E High Level Qualifier
- 'DASD01' to the VOLSER of a permanent pack where the files are allocated
- '3390' to the unit name of the permanent pack where the files are allocated
- 'YTYMM' to the VOLSER of the installation tape
- 'TAPE' to the unit type of the install tape

```
//SAMPJCL PROC YTSHLQ='CAI.SHLQ',                                /*WKSHT #1
//                               YTVOL1='VOL=SER=DASD01,',        /*WKSHT #4
//                               YTUNI1=3390,                     /*WKSHT #5
//                               YTITVOL=YTYMM,                  /*WKSHT #10
//                               YTITUNI=TAPE,                   /*WKSHT #11
//                               SYSOUT='*'
//
//*
//*   ALLOC SAMPJCL LIBRARY
//*
//ALOCJCL EXEC PGM=IEFBR14,TIME=3
//SOURCE  DD  DISP=(NEW,CATLG),DSN=&YTSHLQ..SAMPJCL,
//           UNIT=&YTUNI1,SPACE=(3120,(91,13,6)),&YTVOL1
//           DCB=(DSORG=PO,RECFM=FB,LRECL=80,BLKSIZE=3120)
//*
//*   COPY SAMPJCL LIBRARY
//*
//COPYJCL EXEC PGM=IEBCOPY,REGION=1024K
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSUT3  DD  UNIT=SYSDA,SPACE=(CYL,(1,1)),DISP=(MOD,DELETE,DELETE)
//SYSUT4  DD  UNIT=SYSDA,SPACE=(CYL,(1,1)),DISP=(MOD,DELETE,DELETE)
//INDD    DD  DSN=CAI.SAMPJCL,DISP=SHR,
//           UNIT=&YTITUNI,LABEL=(9,SL),
//           VOL=SER=&YTITVOL
//OUTDD   DD  DSN=&YTSHLQ..SAMPJCL,DISP=SHR
//*
//  PEND
//*
//      EXECUTE SAMPJCL PROC
//*
//STEP1  EXEC SAMPJCL
//*
//COPYJCL.SYSIN  DD
//COPY  OUTDD=OUTDD,INDD=INDD
//*
//
```

## Step 2 – Allocate Product Libraries and Add DDEDEFs to Target/Distribution Zones

This step allocates and initializes private SMP/E libraries and a private SMP/E CSI for the Advantage CA-Datcom/DB products.

This step also executes IEFBR14 to allocate the other product DDDEFs to the Advantage CA-Datcom target (DCOMTGT), and distribution (DCOMDLB) zones.

1. Retrieve SAMPJCL member YTINS02 from the SAMPJCL PDS.
2. Make the required global changes outlined in the Instruction Block. Edit as necessary.
3. Submit the JCL to complete this step.
4. Review the output for successful completion.
5. Expect a condition code of 00.

### Step 2a – Add DDDEFs to Target/Distribution Zone and Set Up UNIX System Services Directories

This step adds additional DDDEFs to the target and distribution zones for the USS component, and sets up additional directories under USS in which to install this component.

1. Retrieve SAMPJCL member YTINS02A from the SAMPJCL PDS.
2. Make the required global changes outlined in the Instruction Block. Edit as necessary.
3. Submit the JCL to complete this step.
4. Review the output for successful completion.
5. Expect a condition code of 00.

**Note:** Make sure the library directory is correct.

## Step 3 – Execute SMP/E RECEIVE Product

This step executes the SMP/E RECEIVE for this product.

1. Retrieve SAMPJCL member YTINS03 from the SAMPJCL PDS.
2. Make the required global changes outlined in the Instruction block. Edit as necessary.
3. Submit the JCL to execute the GIMSMP program, which will receive the product (using SMP/E), to complete this step.
4. Review the output for successful completion.
5. Expect a condition code of 00.

## Step 4 – Execute SMP/E APPLY Product

This step executes the SMP/E APPLY for this product.

1. Retrieve SAMPJCL member YTINS04 from the SAMPJCL PDS.
2. Make the required global changes outlined in the Instruction block. Edit as necessary.
3. Submit the JCL to execute the GIMSMP program, which will apply the product (using SMP/E), to complete this step.
4. Review the output for successful completion.
5. Expect a condition code of 00 or 04.

## Step 5 – Execute SMP/E ACCEPT Product

This step executes the SMP/E ACCEPT for this product.

1. Retrieve SAMPJCL member YTINS05 from the SAMPJCL PDS.
2. Make the required global changes outlined in the Instruction block. Edit as necessary.
3. Submit the JCL to execute the GIMSMP program, which will accept the product (using SMP/E), to complete this step.
4. Review the output for successful completion.

## Identifying Advantage CA-Datcom Server to the Multi-User Facility

The Advantage CA-Datcom/DB Database Multi-User Facility requires a SYSIN statement in its startup job to identify each of the Advantage CA-Datcom products and options operating with it. If a product or option is omitted from the list in the startup SYSIN, the Multi-User Facility does not permit the omitted product or option access to Advantage CA-Datcom/DB. DBMUFPR is a job stream, produced at installation, which initializes the Multi-User Facility. To modify your Multi-User startup options, add the appropriate SYSIN data in this job stream.

If you are installing Advantage CA-Datcom Server for the first time, add the following statement to the SYSIN in your Multi-User Facility startup job:

```
DATACOM          DTCMSVR
```

For more detailed information about the Multi-User Facility startup options, see the *Advantage CA-Datcom/DB Database and System Administrator Guide*.



## Demonstration

To demonstrate the successful installation of this product:

1. Create the startup JCL.
2. Run the setup program at a workstation.

**Note:** When the demonstration starts, Advantage CA-Datcom Server expects the Multi-User Facility (with which it communicates) and CAICCI to already be active. If they are not, the Advantage CA-Datcom Server startup job will not complete successfully.

3. Connect to the mainframe.

For more information, see the *Advantage CA-Datcom Database Server Option User Guide*.

If the connection fails, verify that the workstation entries were entered correctly. If they were, reinstall the product. If further problems occur, contact Computer Associates Technical Support.

## Additional Installation Steps for UNIX System Services

The following are additional UNIX System Services installation steps:

1. The CCI component of CA Common Services for z/OS and OS/390 (FMID CTN2221) must be installed. The libpath in UNIX System Services should contain the directory to the libcci.so module.
2. Once the SMP/E component for Advantage CA-Datcom Server has been installed, set up the libpath to include the directory of the installed modules.
3. The Java class file cadcjava.zip must be pointed to by the UNIX System Services classpath.
4. The Java test program ListPersonnel class is provided for verification of the installation. This file must be placed in the classpath definition before executing it to verify the installation. This program expects the following syntax at execution:

```
java ListPersonnel -s SERVERNAME 0a APPLID -I SYSID -u AUTHID
```

SERVERNAME, APPLID, and SYSID are required runtime parameters. AUTHID is optional unless the default AUTHID has been changed from the default value of SYSUSR. For more information on these fields, see the chapter "ODBC Driver Configuration and Administration" in the *Advantage CA-Datcom Database Server Option User Guide*.



# Maintenance Process

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All Advantage CA-Datcom product maintenance is delivered in SMP/E format. If you installed using SMP/E, you must use SMP/E to apply all maintenance modifications.

***Important!** If you used SMP/E to install but attempt to apply maintenance without it, the integrity of your product libraries is at risk and the maintenance tracking capabilities of SMP/E are lost.*

## SMP/E Libraries

SMP/E uses two sets of libraries:

- Target libraries are the product execution or runtime libraries.
- Distribution libraries are the product backup libraries.

When a product is installed by SMP/E, the target and distribution libraries are populated. The target libraries are populated during the SMP/E APPLY process and the distribution libraries are populated during the SMP/E ACCEPT process. At this point the target and the distribution libraries contain identical versions of the product modules.

Maintenance through SMP/E is applied to the runtime system (the target libraries) first. After the maintenance has been running on the system for a period of time or when it appears that there are no problems with the maintenance, it is applied to the backup libraries (the distribution libraries).

When maintenance is installed on the running libraries, it is said to be applied. When installed on the backup libraries, it is said to be accepted.

## APPLY and ACCEPT Commands

APPLY and ACCEPT are the names of two SMP/E commands. The APPLY process updates the target libraries and the ACCEPT process updates the distribution libraries.

The cycle of a product under SMP/E generally follows this schedule:

- APPLY and ACCEPT the base product installation material, creating target and distribution libraries.
- At this point, the target and distribution libraries are at the same maintenance level. Later, you APPLY maintenance in the form of an APAR or PTF, bringing the target libraries to a new maintenance level.
- The target and distribution libraries are not at different maintenance levels. If there is a problem with the maintenance applied to your target libraries, the maintenance can be removed by the SMP/E RESTORE command.
- The RESTORE process replaces the modules in the target library that were affected by the maintenance with backup modules from the distribution libraries.
- After verifying that the maintenance will not cause any new problems on your runtime system, install the maintenance into your distribution libraries with the SMP/E ACCEPT process. This step brings your target and distribution libraries in sync at the same maintenance level.

Once you ACCEPT the maintenance into your distribution libraries, there is no SMP/E process to remove it. Therefore, it is a good practice to back up your distribution libraries prior to accepting the maintenance.

For more information about the APPLY and ACCEPT commands, see the chapter “System Requirements,” in this guide.

## Maintenance Delivery

Maintenance for this product is packaged and delivered as SMP/E USERMODs, APARs, and PTFs. The various types of maintenance delivery are discussed following.

### Test Fix (USERMOD)

A Test Fix is a test version of a correction to fix a software problem and is usually in ZAP format. The Test Fix is tested internally by CA and may be given to one or more clients for further testing and verification. Always install the Test Fix as a USERMOD. Do not ACCEPT it.

- The Test Fix can be delivered by hardcopy, phone, fax, CA-TCC (Total Client Care), and in some cases on tape. CA-TCC is the primary vehicle for the delivery of the Test Fix.
- The naming convention for the CA Test Fix is *Tnnnnnn* where the *T* prefix identifies the correction as a test fix, and *nnnnnn* is an identification number.

### Special Fix (USERMOD)

A Special Fix modifies the documented functioning of the product. A Special Fix is used for a site-specific or optional correction, and is usually in ZAP format. Like the Test Fix, always install the Special Fix as a USERMOD. Do not ACCEPT it.

- The Special Fix can be delivered by hardcopy, phone, fax, CA-TCC, and in some cases on tape. CA-TCC is the primary vehicle for the delivery of the Special Fix.
- The naming convention for the Special Fix is *LSnnnnnn* where the *LS* prefix indicates a special modification, and *nnnnnn* is an identification number.

### APAR

An APAR is an official published correction to a software problem and is usually in ZAP format. The APAR is installed as an APAR SYSMOD. Do not ACCEPT it.

- APARs can be delivered by hardcopy, phone, fax, CA-TCC, and in some cases on tape.
- CA-TCC is the primary vehicle for the delivery of APARs. The naming convention for APARs is *LOnnnnnn* where the *LO* prefix identifies the fix as an official APAR, and *nnnnnn* is an identification number.

## PTF

A PTF is an official replacement module or modules which fix one or several problems. A PTF is usually an accumulation of APARs. PTFs are installed as PTF SYSMODs which you must ACCEPT prior to installing subsequent maintenance.

- PTFs are always delivered on a periodic maintenance tape.
- The naming convention of PTFs is *pp00yyymm* where *pp* identifies the product code, and *yy* and *mm* indicate the two-digit representations of the year and month the PTF is issued.

## Information Solutions

An informational solution (formerly known as a Product Information Bulletin or PIB) is a Product Documentation Change (PDC), Product Error Alert (PEA), or Product Maintenance Letter (PML). They contain official information relative to a product.

- These can be delivered by hardcopy, CA-TCC, or on maintenance tapes.
- The naming convention is *LInnnnn* where the *LI* prefix identifies it as an informational APAR, and *nnnnn* is an identification number.

## USERMOD Installation Steps

When you receive a Test Fix from CA, use the following steps to install the USERMOD SYSMOD:

1. RECEIVE the USERMOD.
2. Run an APPLY CHECK to verify the USERMOD.
3. Review the results of the APPLY CHECK and make any necessary corrections.
4. APPLY the USERMOD.
5. Test.
6. Do not ACCEPT the USERMOD.

## APAR Installation Steps

When you receive an APAR from CA, use the following steps to install the APAR SYSMOD:

1. RECEIVE the APAR.
2. Run an APPLY CHECK to verify the APAR.
3. Review the results of the APPLY CHECK and make any necessary corrections.
4. APPLY the APAR.
5. Test.
6. Do not ACCEPT the APAR.

## PTF Maintenance Tape Installation Steps

This section describes the steps necessary to install an Advantage CA-Datcom PTF maintenance tape.

### Distribution Tape

The CA product maintenance tape is distributed periodically on a standard label, 6250 BPI tape reel, or 3480 tape cartridge processible by SMP/E. It contains the newly published official PTF SYSMODs for CA products.

This tape can be used for both installation and maintenance. If you have installed using this tape, all maintenance is installed as part of the base. There is no need to perform any maintenance until you receive the next install/PTF tape.

**Important!** Use this tape only where SMP/E controls Advantage CA-Datcom installation and maintenance.

### Materials

A partitioned data set (PDS) containing complete instructions and sample JCL is provided on the product maintenance tape.

All JCL necessary to install the maintenance is in the ninth data set in IEBCOPY unload format. To load the maintenance sample JCL, use the same sample JCL PDS (YTINS01) as for new installations.

The VOLSER for maintenance tapes follows the format *YTyyymm*, where *YT* is the product ID and *yyymm* is the year and month the tape was issued. See the external label of the tape for the current volume serial number.

## Advantage CA-Datcom Maintenance Steps

**Important!** ACCEPT all maintenance from previous Advantage CA-Datcom maintenance tapes before APPLYing any new PTFs.

The following list summarizes the steps involved in the maintenance process for your software product. Review this list before attempting to perform any PTF maintenance.

Step	Description
1	Review your Installation Worksheet for the correct parameter values.
2	Load the sample installation JCL from the tape.
3	Back up your SMP/E environment.
4	RECEIVE the Advantage CA-Datcom maintenance.
5	APPLY CHECK Advantage CA-Datcom maintenance.
6	RESTORE any applicable SYSMODs.
7	APPLY Advantage CA-Datcom maintenance.
8	ACCEPT Advantage CA-Datcom PTF maintenance.
9	Re-APPLY any applicable SYSMODs.
10	Save all materials and output.

### Step 1 – Review Installation Worksheet

See the worksheet presented in the chapter “Installation Worksheet,” or SAMPJCL member @YTWKSHI. Before installation, you should have completed this worksheet by providing the desired values. Review this worksheet for the appropriate parameter values before beginning the maintenance installation.

### Step 2 – Load Maintenance Sample JCL Library

Advantage CA-Datcom is maintained by SMP/E. The maintenance tape is a standard label 6250 BPI tape reel, or 3480 tape cartridge containing all the necessary data.

Before installing product maintenance, load the sample JCL library from tape. This is the ninth file on the tape and is in IEBCOPY unloaded format. Use the sample JCL in Step 1 – Allocate the Advantage CA-Datcom Server SAMPJCL Library as a model to load the SAMPJCL library to DASD. When this job is complete, your library contains the JCL needed to perform maintenance on your products.



To satisfy your data center needs, you may need to tailor the JCL to perform the remaining maintenance steps. See the worksheet you completed before installation for the required JCL parameter values.

### Step 3 – Back Up SMP/E Environment

Using your installation standard procedures, back up your SMP/E data sets before running any maintenance jobs. This provides a checkpoint to which you can return if a problem occurs during the maintenance process.

### Step 4 – RECEIVE Maintenance

Maintenance JCL member YT50MREC receives all the PTFs corresponding to your products.

**Note:** SMP/E does not receive PTFs for products not present in your SMP/E environment.

Edit YT50MREC to conform to your installation standards. Edit all JCL as necessary. Submit the job and verify that the RECEIVE processing ran successfully. If the SMP/E RECEIVE completed with a return code greater than 4, follow these steps:

1. Review the output carefully before continuing.
2. Correct the problem.
3. Resubmit the job.

If an SMPHOLD data set was not previously allocated, customize and execute sample JCL member YT50MHLD to allocate the SMPHOLD data set. If you are allocating this data set for the first time, be certain to update your SMP/E procedure accordingly.

## Step 5 – APPLY CHECK Maintenance

SAMPJCL member YT50MAPC APPLY CHECKs all PTFs corresponding to the services specified within the SMP\_CNTL DD statement. The purpose of this step is to identify SMP/E USERMODs and APARs that prevent PTF applications, and to identify any PTFs already applied.

CA requires removal of any SYSMOD preventing PTF application. To allow PTF application, perform SMP/E RESTORE processing on the SYSMODs identified during SMP/E APPLY CHECK processing.

If other CA products have been installed, you may have performed an APPLY CHECK on some of these PTFs. However, it is always good practice to run SMP/E APPLY CHECK processing immediately before an SMP/E APPLY.

Edit member YT50MAPC to conform to your installation standards. Edit all JCL as necessary. Submit the job and verify that APPLY CHECK processing ran successfully. If the SMP/E APPLY CHECK completed with a return code greater than 4, follow these steps:

1. Review the output carefully before continuing.
2. Correct the problem.
3. Resubmit the job.

### **CAUTION!**

- SMP/E APPLY CHECK processing performs preliminary validation on SYSMODs individually. Carefully review the SMP/E generated reports, noting any possible regression of SYSMODs.
- SMP/E APPLY processing may fail due to SYSMODs in HOLD status. See the SMP/E RECEIVE output for details regarding SYSMODs in HOLD status. After you have taken appropriate action on these SYSMODs, you can apply them by specifying **BYPASS(HOLDSYSTEM(reason-id))** on the APPLY command. The **reason-id** is specified in the output of the SMP/E RECEIVE step.

## Step 6 – RESTORE Applicable SYSMODs

*If you do not have any SYSMODs to restore, you can proceed to the next step.*

SAMPJCL member YT50MRES contains the control statements for SMP/E RESTORE processing. This step restores the SMP/E USERMODs and APARs (SYSMODs) identified by APPLY CHECK processing to allow for PTF application.

Edit all JCL as necessary. Submit the job and verify that RESTORE processing ran successfully. If the SMP/E RESTORE completed with a return code greater than 4, follow these steps:

1. Review the output carefully before continuing.
2. Correct the problem.
3. Submit the job.

We suggest that you run the SMP/E APPLY CHECK again to verify that there are no additional SYSMODs which inhibit the application of the new maintenance.

## Step 7 – APPLY Maintenance

SAMPJCL member YT50MAPP applies all PTFs corresponding to Advantage CA-Datcom maintenance. Edit member YT50MAPP to conform to your installation standards.

Edit all JCL as necessary. Submit the job and verify that APPLY processing ran successfully. If the SMP/E APPLY completed with a return code greater than 4, follow these steps:

1. Review the output carefully before continuing.
2. Correct the problem.
3. Resubmit the job.

For PTFs in HOLD Status:

SMP/E APPLY processing may fail due to SYSMODs in HOLD status. For details on SYSMODs in HOLD status, see the SMP/E RECEIVE output. After you have taken appropriate action on these SYSMODs, you can apply them by specifying **BYPASS(HOLDSYSTEM(reason-id))** on the APPLY command. The **reason-id** is specified in the output of the SMP/E RECEIVE step.

## Step 8 – ACCEPT Maintenance

SAMPJCL member YT50MACC accepts all PTFs corresponding to Advantage CA-Datcom maintenance. Edit member YT50MACC to conform to your installation standards.

Edit all JCL as necessary. Submit the job and verify that ACCEPT processing ran successfully. If the SMP/E ACCEPT completed with a return code greater than 4, follow these steps:

1. Review the output carefully before continuing.
2. Correct the problem.
3. Resubmit the job.

For PTFs in HOLD Status:

SMP/E ACCEPT processing may fail due to SYSMODs in HOLD status. For details on SYSMODs in HOLD status, see the SMP/E RECEIVE output. After you have taken appropriate action on these SYSMODs, you can accept them by specifying **BYPASS(HOLDSYSTEM(reason-id))** on the ACCEPT command. The **reason-id** is specified in the output of the SMP/E RECEIVE step.

**CAUTION! Do not, under any circumstances, ACCEPT a USERMOD that has been applied on top of the Advantage CA-Datcom base level of maintenance. ACCEPT only base functions and PTFs.**

## Step 9 – Re-APPLY Applicable SYSMODs

*If no applicable SYSMODs were restored, proceed to the next step.*

Review all the USERMODs and APARs restored by the previous step. SYSMODs identified by APPLY CHECK processing may be at a higher level than the PTFs contained on the Advantage CA-Datcom maintenance tape.

APARs can be cross-checked using SMP/E. If the current status of an APAR in question is SUP (superseded), then the SYSMOD for that APAR does *not* need to be reapplied.

Edit member YT50MRAP to conform to your installation standards. Edit all JCL as necessary. Submit the job and verify that the APPLY processing ran successfully. If the SMP/E APPLY completed with a return code greater than 4, follow these steps:

1. Review the output carefully before continuing.
2. Correct the problem.
3. Resubmit the job.

**Note:** SMP/E can handle only one update per element per APPLY SELECT statement. It may be necessary to use multiple APPLY SELECT sentences to reapply applicable SYSODs.

## Step 10 – Save All Materials and Output

Be sure to save all of your maintenance materials and all output from the maintenance process. This material is essential for CA to provide the maintenance and support of your products in a timely and accurate manner.



# Troubleshooting

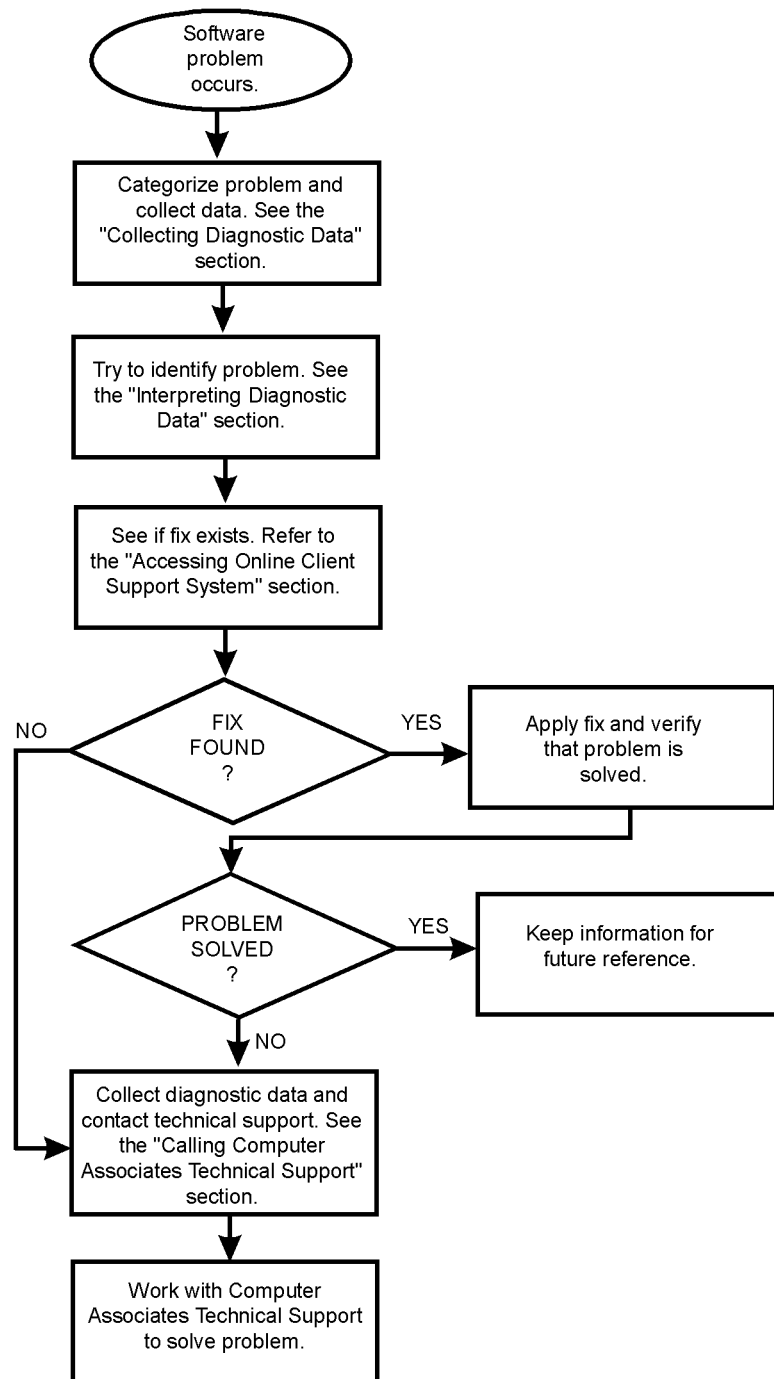
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This chapter contains information about:

- Identifying and resolving problems
- Contacting Computer Associates Technical Support
- Receiving ongoing product versions and maintenance
- Requesting product enhancements

## Diagnostic Procedures

Use the flowchart below to guide you through the procedures you should follow if you have a problem with a Computer Associates software product. Each of these procedures is detailed on the following pages:





## Problem Resolution

Before contacting Technical Support, attempt to resolve the problem yourself using the following:

### Verifying the Problem

1. Examine the procedure that you used, comparing it to the documented procedure for performing the required activity.
2. “Diagnostic Procedures” on page 7-2 identifies several potential problem areas and presents general debugging suggestions. Review this section for solutions that apply to your current problem.
3. If you find no discrepancies between your procedures and the documented procedures, repeat the activity under conditions similar to those which existed when the problem first appeared. (If you no longer get unsatisfactory results, an inadvertent error may have caused the problem.)
4. If the same error recurs when you repeat a given activity, and you can find nothing in the documentation to suggest that your procedure may be flawed, try to secure assistance in resolving the problem from others at your site.

### Collecting Diagnostic Data

This section identifies some potential problem areas and presents debugging suggestions. It also lists the documentation to have on hand when communicating with Technical Support about each type of problem.

### An Application Program or Advantage CA-Dataquery

The following are examples of potential problems:

- An application program or Advantage CA-Dataquery terminates abnormally.
- A performance problem is indicated by slow online response time or slow batch job processing.

#### General Debugging:

1. If you received a system abend, see the *Advantage CA-Datacom Database and System Administrator Guide* for information about abends.

2. If you received an Advantage CA-Datcom/DB return code, check the return code description for the recommended action. If a dump is indicated:
  - In batch, see the *Advantage CA-Datcom Database and System Administrator Guide* for details on using dumps.
  - Online, check the transaction dump.
3. If it is a performance problem, check if the problem is associated with one job or if it is associated with an environment problem. See the *Advantage CA-Datcom Database and System Administrator Guide* for details on monitoring the Advantage CA-Datcom environment and optimizing Advantage CA-Datcom/DB performance.

Have the following on hand when you call Technical Support:

- A completed Support Contact Information form
- Snap dumps
- PXX full dump (make sure you have the dump that is applicable to your contact)
- JCL for job submission
- Source Code
- User Requirements Table assembly
- Link-edit maps
- Console log
- Statistics and Diagnostics Area (PXX) Summary Report

## Multi-User Facility

The following are examples of potential problems:

- An abend occurs that brought down the Multi-User Facility and all active Advantage CA-Datcom/DB requests receive a return code 86.
- The Multi-User Facility is canceled by an operator cancel command.
- An error occurs that resulted in an Advantage CA-Datcom/DB Multi-User Facility error message or return code.
- A performance problem is indicated by slow response time or batch job processing.

### General Debugging:

1. Check the activity status of jobs operating through the Multi-User Facility using the COMM STATUS function of Advantage CA-Datcom/DB Utility (DBUTLTY). See the *Advantage CA-Datcom/DB DBUTLTY Reference Guide*.

2. Check the message or return code description for the recommended action.
3. If the Multi-User Facility abends:
  - Locate the task that caused the problem. See the *Advantage CA-Datcom/DB Database and System Administrator Guide* for information on using dumps.
  - Follow the procedures in the *Advantage CA-Datcom/DB Database and System Administrator Guide* to restart the Multi-User Facility. In z/OS and OS/390 environments, obtain a snap dump of the ECSA prior to restarting the Multi-User Facility. See the DBUTLTY COMM function in the *Advantage CA-Datcom/DB DBUTLTY Reference Guide*.
4. If it is a performance problem, check if the problem is associated with one job or if it is associated with an environment problem. See the *Advantage CA-Datcom/DB Database and System Administrator Guide* for details on monitoring the Advantage CA-Datcom environment and optimizing Advantage CA-Datcom/DB performance.
5. If the current maintenance tape has not been applied, check the information member for an applicable solution.

Have the following on hand when you call Technical Support:

- A completed Support Contact Information form
- COMM STATUS Report
- Snap dumps (if applicable)
- PXX full dump (make sure you have the dump that is applicable to your contact)
- System dump (if applicable)
- Statistics and Diagnostics Area (PXX) Summary Report
- JCL for the job submission
- Master List parameter settings
- Console log

### Advantage CA-Datcom/DB Utility (DBUTLTY)

The following are examples of potential problems:

- Advantage CA-Datcom/DB Utility (DBUTLTY) abended with a system abend (such as system code 0C4).
- You received a return code or error message from Advantage CA-Datcom/DB Utility (DBUTLTY).
- A performance problem is indicated by slow job processing.

**General Debugging:**

1. Check the message or return code description for the recommended action.
2. If a dump is indicated, see the *Advantage CA-Datcom/DB Database and System Administrator Guide* for information on using dumps.
3. If it is a performance problem, check if the problem is associated with one job or if it associated with an environment problem. See the *Advantage CA-Datcom/DB Database and System Administrator Guide* for details on monitoring the Advantage CA-Datcom environment and optimizing Advantage CA-Datcom/DB performance.
4. If the current maintenance tape has not been applied, check the information member for an applicable solution.

Have the following on hand when you call Technical Support:

- A completed Support Contact Information form
- System dump (if applicable)
- Snap dumps (if applicable)
- JCL for the job submission
- Master List parameter settings
- Console log

## System Crash

The following is an example of a potential problem:

- An abend occurs that brings down CICS or the operating system, including Advantage CA-Datcom/DB and any transactions currently active.

**General Debugging:**

1. If you receive a system message, see the operating system documentation for the various system dump formats that can be produced. Also, see the *Advantage CA-Datcom/DB Database and System Administrator Guide*.
2. If you receive an Advantage CA-Datcom/DB message, check the message or return code description for the recommended action. If a dump is indicated, see the *Advantage CA-Datcom/DB Database and System Administrator Guide*.
3. See the *Advantage CA-Datcom/DB Database and System Administrator Guide* for recommended restart procedures.

Have the following on hand when you call Technical Support:

- A completed Support Contact Information form
- System dump
- Snap dumps (if applicable)
- CXX Report
- Console log

## Interpreting Diagnostic Data

When you have collected the specified diagnostic data, write down your answers to the following questions:

1. What was the sequence of events prior to the error condition?
2. What circumstances existed when the problem occurred and what action did you take?
3. Has this situation occurred before? What was different then?
4. Did the problem occur after a particular PTF was applied or after a new version of the software was installed?
5. Have you recently installed a new version of the operating system?
6. Has the hardware configuration (tape drives, disk drives, and so forth) changed?

From your response to these questions and the diagnostic data, try to identify the cause and resolve the problem.

If you determine that the problem is a result of an error in a Computer Associates software product, you can make use of the Computer Associates online client support system to see if a fix (APAR or PTF) or other solution to your problem has been published and call Technical Support.

## Accessing the Online Client Support System

Computer Associates is making extensive use of the Internet for your benefit. Computer Associates encourages you to “surf the net” to the Computer Associates home page at *ca.com* and the support system at *eSupport.ca.com*. The Computer Associates Internet site provides a great variety of information about Computer Associates products and services, including:

- Service and support
- Product information and sales

- CA-World conference information
- Press releases
- Computer Associates user groups

StarTCC, the web-based portion of CA-TCC (CA-Total Client Care), gives you realtime, interactive access to Computer Associates product support information through the Internet. Using StarTCC, you can:

- Open new issues.
- Browse or update your existing issues and enhancement requests.
- Perform keyword searches.
- Download solutions, PTFs, and important notices regarding Computer Associates products, maintenance, and documentation.

## Requirements for Using StarTCC

The following are the requirements to use StarTCC:

- You must be a Computer Associates client with a current maintenance agreement.
- You must register through the Computer Associates Internet site.
- You must access the Internet with a browser that supports the HTML specification 2.0 or higher, such as Netscape Navigator 4.0 or higher or Microsoft Internet Explorer 4.0 or higher.

Browsers that meet the HTML requirement support the following functions, which are required for StarTCC:

- Secure sockets layer (SSL) to encrypt your transaction traffic
- Encrypted data records (known as COOKIES)
- HTML tables

## StarTCC Security

StarTCC runs as a secured server (SSL). You may need to configure your browser to enable SSL. Guidelines for doing this are provided on the Computer Associates Technical Support page.

## Accessing StarTCC

To access StarTCC, go to *eSupport.ca.com*. The StarTCC options are as follows:

- Registration
- Access

### StarTCC Registration

Select the registration option to identify yourself to StarTCC. You must register before you can access StarTCC online. There are prompts for all required information, including your name, site ID, company name, email address, postal address, and so on.

**Note:** If you do not have a PIN number, StarTCC provides one for you when you register.

### Access StarTCC

Select the access option to begin using StarTCC. When prompted, enter your user ID and password. Once your signon is validated, you can perform the following:

<b>Open a new issue</b>	Open an issue for, or request an enhancement to, one of your Computer Associates products.
<b>Browse your issues and enhancement requests</b>	Display all issues for your site. The issues are grouped into three categories: Opened, Closed, and Enhancement Requests (DARs).
<b>Browse and/or download solutions</b>	Specify criteria for selecting solutions, which you can then view or download.
<b>Search the Computer Associates knowledge base</b>	Specify criteria for searching the Computer Associates database for solutions, problems, and keywords that can provide you with immediate answers to your product support questions and concerns.
<b>Update your eSupport profile</b>	Make changes to your default email address, phone number, and password whenever necessary.
<b>Display your site's licenses</b>	View a list of all the Computer Associates products for which your company site is currently licensed.

**Open a new issue**

Open an issue for, or request an enhancement to, one of your Computer Associates products.

**Display eSupport news items**

View and download recently published articles for Computer Associates products, instructions for downloading from eSupport, and helpful information for using StarTCC, eSupport, or other Computer Associates products.

## Accessing the Technical Support Phone Services Directory

The Computer Associates Technical Support Phone Services Directory lists each Computer Associates product and the telephone number to call for primary support for that product. To access the Support Phone Services Directory online, go to [SupportConnect.ca.com](http://SupportConnect.ca.com).

## CA-TLC: Total License Care

Many Computer Associates software solutions use license keys or authorization codes to validate your hardware configuration. If you need assistance obtaining a license key or authorization code, contact the CA-TLC: Total License Care group at [SupportConnect.ca.com](http://SupportConnect.ca.com).

## Calling Technical Support

If you have a current maintenance agreement with CA, prepare to contact Technical Support for any of the following:

**New Issue**

To open an issue when you have identified one of the following types of problems but have not been able to solve it. See “Preparing for a Call on a New Issue.”

- Problem with an Advantage CA-Datacom product
- Problems related to the Advantage CA-Datacom product’s coexistence with other software products
- Site-specific solutions you may require
- Problem in determining how to use an Advantage CA-Datacom product feature for a site-specific purpose



- Problem with documentation, including errors, omissions, or incomplete explanations or procedures

#### Open Issue

To reopen contact with Technical Support for any of the following reasons. See “Preparing for a Call on an Existing Issue.”

- To provide new information on an open issue
- To inquire about the status of an open issue
- To revise the problem severity rating (see “Describing and Prioritizing the Problem”)
- To inform Technical Support that you have solved an open issue, and how

#### Closed Issue

To reopen a closed issue due to the reappearance of the original problem. Be sure to identify the issue by its original contact number.

**Note:** Every client call is answered by Technical Support. Therefore, calls for status or severity change are the best means you have of keeping current on the problem solving process.

### Preparing for a Call on a New Issue

Prior to placing the call on a new issue, prepare the following:

- A photocopy of the *Support Contact Information* form with the following sections completed:
  - General Information
  - Your Company Information
  - Product Versions
- Your most recent *Support Contact Number Log* or a blank form with the date of the call recorded in the “Date Opened” field.
- A history of the problem

**Note:** The person calling Technical Support should be generally familiar with the Advantage CA-Datcom products installed at the site, their current versions, their current maintenance levels, and the various options and features in use. For example, the Technical Support Specialist may need to know various options specified in your Multi-User startup options, User Requirements Tables, Datadictionary System Resource Table, or Advantage CA-Datquery Options List assemblies. If the caller does not have this information, he should have immediate access to someone who does.

## Preparing for a Call on an Existing Issue

When you call Technical Support, identify the issue at hand by contact number, not by the name of the Specialist with whom you previously spoke. The issue may have been transferred to a different group internally, and a new Specialist may have assumed responsibility for further action on the issue. All prior history of the contact is retained in the Technical Support tracking and reporting system under that contact number, so that the new Specialist has immediate access to it.

Prior to placing the call, have the following available:

- The Support Contact Information form containing the Computer Associates supplied information: Technical Support Specialist, contact number, issue number (if there is more than one issue associated with the contact number), solution number, if provided, and your Computer Associates Client ID.

**Note:** If you no longer have the Support Contact Information form, look up the contact number recorded on your Support Contact Number Log form.

- A brief description of the nature of this call.

## Where to Call for Support

If you are in North America, see the telephone support directory on the Computer Associates website (see “Accessing the Technical Support Phone Services Directory”) for the Technical Support phone number. Outside North America, call your local Computer Associates Support Center during normal business hours.

**Note:** Only your local Computer Associates Support Center can provide native language assistance. Please use English when contacting any North American center.

## Describing and Prioritizing the Problem

If you are unable to resolve the problem, please have the following information ready before you contact Technical Support:

1. Identify the context in which the problem occurred:

<b>Initial installation</b>	Problem during the installation of the product
<b>Product upgrade</b>	Problem during the installation of a maintenance tape or new version
<b>Pilot project</b>	Problem occurring during a pilot project
<b>Test</b>	Problem with something that is not in production

<b>Initial installation</b>	Problem during the installation of the product
<b>Production</b>	Problem with something that is currently in production

2. If this is a new installation, product upgrade, pilot project, or problem with a test system, list the steps you followed up to this point.
3. If the problem occurred in a production environment, describe the following in detail:
  - The attempted activity, with expected results and actual results
  - The attempts to resolve the problem and their results

**Note:** The very act of producing an accurate description of the problem may be sufficient for you to determine its cause and perhaps a way to correct it. If not, an accurate description will assist the Technical Support Specialist in helping you to resolve it.

4. Computer Associates uses a rating system to expedite resolution of support calls. Use the following guide to establish the severity of your problem.

<b>Severity</b>	<b>Description</b>
<b>1</b>	Production system down or major business impact.
<b>2</b>	Major component nonfunctional or serious business impact.
<b>3</b>	Minor component nonfunctional or moderate business impact.
<b>4</b>	General question or a noncritical problem.

5. Make a photocopy of each of the following forms and complete the applicable sections of each form.

**Support Contact  
Information Form**

Prior to making the call, use this form to record all the information required by the Technical Support Specialist. During the call, use this form to record all the information the Specialist provides.

**Support Contact  
Number Log**

Use this form to keep a permanent record of the contact number associated with the issues about which you contact Technical Support. If an issue which has been closed reappears due to incomplete resolution, this form can serve as a reference of the original contact number so that the Specialist can reactivate the appropriate file.

6. Follow the guidelines described next.

## Making the Call

When you call Technical Support, you are connected directly to a Specialist for Advantage CA-Datcom. If no Advantage CA-Datcom Specialist is available, your call will be answered by a Specialist for another Computer Associates product who will record the problem in the Technical Support tracking system. The next available Advantage CA-Datcom Specialist will return your call as soon as possible. All calls are returned in the order received and by degree of severity.

1. Provide the Technical Support Specialist with the following information:

- Your Computer Associates Client ID, if known
- Severity of your problem
- “Your Company Information”
- History of your problem

**Note:** When you call about a new issue, do not use a contact number previously assigned for a different issue. This could impede the resolution of your current problem.

If you do not know your Computer Associates Client ID or are not certain what the problem severity code should be, the Specialist will provide this information to you. Record the Client ID and severity level on the *Support Contact Information* form.

2. The Specialist will enter your issues in the Technical Support tracking system and give you a contact number and, if you address multiple issues, the issue numbers. Record this information on the *Support Contact Information* form.
3. The Specialist may request that you:
  - Relate additional information.
  - Ship certain documentation.
  - Follow directions on a terminal to perform directed troubleshooting.
  - Relate certain options in use at your site.
4. If a solution is determined at the initial call, the Specialist will give you a solution number. Record the solution number on the *Support Contact Information* form. Also, record the current date under “Date Closed” on the *Support Contact Number Log*.
5. If the problem cannot be resolved immediately over the phone, the Specialist will give you a solution number and advise you to expect the solution in the form of a module replacement, ZAP, or source change. As soon as the solution is ready, the Specialist will supply it to you by one of the following methods:
  - FAX, telex, or through the mail

- Over the telephone
  - On tape
  - Through the online client support system
6. If the solution resolves the problem, record the date of resolution under “Date Closed” on the *Support Contact Number Log*. Otherwise, continue the dialog with the Specialist until the problem is resolved.

## Sending Documentation to Technical Support

Use the following guidelines when the Technical Support Specialist requests dumps, trace listings, compile listings, or other documentation related to an open issue:

1. Write the contact and issue numbers prominently on each listing.
2. Include a photocopy of the completed *Support Contact Information* form for this issue.
3. In the United States and Canada, address the package as specified by the Technical Support Specialist.

Outside the United States and Canada, obtain the local address from your Computer Associates representative.

## Sample Forms

The forms on the following pages are designed to help you keep an accurate record of your contacts with Technical Support. Use these when making call. For example, use the *Support Contact Number Log* to record the issues associated with a Contact Number. When issues are solved (closed), enter the date in the last column. If a closed problem recurs, see this log for its Contact Number so that the appropriate file can be reactivated.

**Support Contact Number Log**

**Product Support Assistance**

Contact Number	Date	Time	Description	Solved/Closed

## Support Contact Information

### General Information:

Support Telephone Number:
Date of Call:
Problem Severity:

### CA-Supplied Information:

Support Specialist:
FAX Number:
Your CA Client ID:
Product and Release:
Contact, Issue, Solution Number:

### Your Company Information:

Company Name:
Location:
Your Name:
Telephone Number and Extension:
FAX Number:
Alternate Contact Person:
Alternate Telephone Number and Extension:
Notes:

## Support Contact Information – Page 2

Operating System:

### Product Versions and Service Packs:

Product	Version	Service Pack
Operating System		
CAIIPC (Inter-Product Components)		
CICS		
Advantage CA-Datcom Database Option for CICS Services		
CA Common Services for z/OS and OS/390		
Advantage CA-Datcom/DB Database		
Advantage CA-Datcom Database Fast Restore Option		
Advantage CA-Datcom Database Presspack Option		
Advantage CA-Datcom Database Server Option		
Advantage CA-Datcom Database STAR Option		
Advantage CA-Datcom Database Transparency Option for DB2		
Advantage CA-Datcom Database Transparency Option for DL/I		
Advantage CA-Datcom Database IMSDC Services Option		
Advantage CA-Datcom Database Transparency Option for TOTAL		
Advantage CA-Datcom Database Transparency Option for VSAM		
Advantage CA-Datquery for CA-Datcom		
Advantage CA-Ideal for CA-Datcom		



Support Contact Information – Page 3

Additional solutions applied:

Product	Solution Numbers

Enclosed Documentation:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_
- 5. \_\_\_\_\_
- 6. \_\_\_\_\_
- 7. \_\_\_\_\_
- 8. \_\_\_\_\_
- 9. \_\_\_\_\_
- 10. \_\_\_\_\_

## Product Versions and Maintenance

New users of Advantage CA-Datcom are provided with a distribution tape containing the current versions of the system. Clients should operate only under currently supported versions of Advantage CA-Datcom.

Standard user documentation is also provided to Advantage CA-Datcom users. Updates to this documentation are provided automatically to all clients having current maintenance agreements.

Clients with current maintenance agreements also receive ongoing Advantage CA-Datcom maintenance. When a new version of the system is available, a notice is sent to all current Advantage CA-Datcom clients.

## Requesting Enhancements

Computer Associates welcomes your suggestions for product enhancements. All suggestions are considered and acknowledged. You can use the Computer Associates Demand Analysis Request (DAR) system that serves as a central receiving point for all enhancement requests.

- Contact your Computer Associates account manager who will initiate a DAR for you.
- Enter your request through SupportConnect the web-based, interactive support system, (access [SupportConnect.ca.com](http://SupportConnect.ca.com)).

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